

- 2 -

1. (currently amended) A method of simultaneously displaying a parametric diagnostic image and an anatomical diagnostic image of the region of interest corresponding to the parametric diagnostic image, comprising:

acquiring an anatomical flow image of a region of interest of a subject comprising tissue containing blood flow;

acquiring a parametric image of the region of interest of the subject; and

displaying the parametric image in anatomical registration with the anatomical flow image, wherein the relative opacity of the registered parametric image and anatomical flow image is variable.

2. (currently amended) The method of Claim 1, ~~wherein acquiring an anatomical flow image comprises acquiring an anatomical image of a region of the body containing blood flow; and~~

wherein acquiring a parametric image comprises acquiring a parametric image of a characteristic of blood flow in the region of the body.

3. (original) The method of claim 2, wherein acquiring a parametric image comprises acquiring a parametric image of the blood flow perfusion of the tissue in the region of the body.

4. (original) The method of claim 3, further comprising directing a flow of contrast agent to the region of interest of the subject.

5. (previously presented) The method of claim 1, further comprising varying the relative opacity of the registered parametric image and anatomical flow image in a continuous manner.

6. (previously presented) The method of claim 1, further comprising varying the relative opacity of the registered parametric image and anatomical flow image in a stepwise manner.

7. (original) The method of claim 5, wherein varying the relative opacity further comprises varying the opacity within a range extending from an opaque anatomical image and a transparent parametric image; to an opaque anatomical image overlaid with an opaque parametric image; to a transparent anatomical image and an opaque parametric image.

8. (original) The method of claim 7, wherein varying the opacity within a range further comprises varying the opacity within a range which includes an opacity setting in which a translucent parametric image is shown in registration with a substantially opaque anatomical image.

9. (original) The method of claim 6, wherein varying the relative opacity further comprises varying the opacity within a range extending from an opaque anatomical image and a transparent parametric image; to an opaque anatomical image overlaid with an opaque parametric image; to a transparent anatomical image and an opaque parametric image.

10. (currently amended) A diagnostic imaging system for displaying a parametric image in anatomical registration with an anatomical flow image of a region of interest of a subject comprising:

a source of diagnostic flow images of a region of interest of a subject
| comprising tissue containing blood flow;

a source of parametric images of the region of interest of the subject;

- 4 -

a display coupled to the source of diagnostic flow images and the source of parametric images which displays a diagnostic flow image and a corresponding parametric image of the same region in anatomical registration;

a display processor coupled to the display which acts to set the relative opacity of the registered diagnostic flow image and parametric image; and

a user control, coupled to the display processor, by which a user can set the relative opacity of the registered diagnostic flow image and parametric image.

11. (currently amended) The diagnostic imaging system of Claim 10, ~~wherein the source of diagnostic flow images comprises a source of diagnostic images of a region of interest containing blood flow; and wherein the source of parametric images comprises a source of at least one parametric image of a characteristic of the blood flow in the region of interest.~~

12. (original) The diagnostic imaging system of Claim 11, wherein the source of parametric images comprises a source of at least one parametric image of the blood flow perfusion in the tissue depicted in the region of interest.

13. (original) The diagnostic imaging system of Claim 10, wherein the display processor further comprises an opacity processor which acts to set the relative opacity of the registered diagnostic image and parametric image within a range varying from an opaque diagnostic image and a transparent parametric image; to an opaque diagnostic image overlaid with an opaque parametric image; to a transparent diagnostic image and an opaque parametric image.

14. (original) The diagnostic imaging system of claim 10 wherein the user control comprises a user control, coupled to the display processor, by which a user can set the relative opacity of the registered diagnostic image and parametric image within a continuous range of relative opacity settings.

- 5 -

15. (original) The diagnostic imaging system of claim 10 wherein the user control comprises a user control, coupled to the display processor, by which a user can set the relative opacity of the registered diagnostic image and parametric image to one of a discrete number of relative opacity settings.

16. (original) The diagnostic imaging system of claim 10 wherein the user control comprises a user control, coupled to the display processor, by which a user can set the relative opacity of the registered diagnostic image and parametric image to a setting in which the display displays a translucent parametric image in registration with a substantially opaque diagnostic image.

17. (original) The diagnostic imaging system of claim 10 wherein the display further comprises a display which displays in real time a diagnostic image sequence and a corresponding parametric image sequence in anatomical registration.

18. (original) The diagnostic imaging system of claim 10 wherein the user control comprises a user control, coupled to the display processor, by which a user can set the relative opacity of the registered diagnostic image and parametric image to a setting in which the display displays a translucent diagnostic image in registration with a substantially opaque parametric image.

19. (original) The diagnostic imaging system of claim 10 wherein the user control further comprises a plurality of separate user controls by which a user can set the opacity of the parametric image and the opacity of the registered diagnostic image.